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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/766,320 | KRYGIER, MARCELO | |
| | Examiner | Art Unit | |
| | DUC T. DOAN | 2188 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *29 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Status of Claims*

Claims 1-24 are pending in the Application.

Claim 1-24 are rejected.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, and 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakhani et al (US 2003/0126385) in view of SanDisk Secure Digital Card product manual, version 1.9, herein SanDisk Secure Digital Card product manual, version 1.9, herein SD, (SanDisk Corp, December 2003).

As in claim 1, Lakhani discloses a method for operating a non-volatile memory device comprising:

receiving a command that includes an address argument comprising a plurality of address bits, one or more of address bits comprising unused bits and any remaining bits

providing an address for a location in the non-volatile memory device (Lakhani's control bits and address bits corresponds to the claim's address argument for a memory access command. Because the control bits do not contain address bits of memory device such as bits A [22:0] therefore the control bits are unused bits of an address argument as claimed).

using the one or more unused bits of the address argument of the command as an addressing mode field to determine whether said address argument is a byte address argument or a block address argument ( Table A, paragraph 75, C1,C2 bits used as a first mode/ byte addressing mode; paragraph 69; paragraph 76 discloses C1,C2 bits being used to determine a second mode, corresponding to the claim's block mode, in which an operation occurs for data in blocks of memory devices, see paragraph 70);

the remaining bits provide a byte address when the address argument is a byte address argument and the remaining bits provide a block address when the address argument is a block address argument (Lakhani's paragraphs 69,70,76, the remaining bits A are provided/used in either addressing mode ), Lakhani does not disclose the block address having the same number of bits as the byte address. However, SD discloses a method accessing block of data using commands that are byte addressable (see SD's 1.5.10.4). It would have been obvious to one of ordinary skill in the art at the time of invention to include the block mode accessing data with byte addressable as suggested by SD in Lakhani's system thereby further allowing accessing data of memory being accessed in block mode with additional byte addressing capability.

As in claims 2-3, Lakhani discloses determining that the address argument is the byte address argument when the addressing mode field is zero (claim 2; Lakhani's paragraph 75 discloses the C1, C2 having value 0 for first mode/byte mode operation); determining that the address argument is the block address argument when the addressing mode field is one (claim 3; Lakhani's paragraph 76 discloses C1 having value of 1 for second mode/block mode operation).

As in claim 4, Lakhani discloses accessing a byte address within a memory unit according to the byte address argument if said address argument is a byte address argument (claim 4, Table A, paragraph 75, C1,C2 bits used as a byte addressing mod, paragraph 69).

As in claim 5, Lakhani discloses accessing a block address within a memory unit according to the block address argument if said address argument is a block address argument (Table A, paragraph 76, C1, C2 bits used as block address mode, in which an operation occurs for data in blocks of memory device, see paragraph 70).

As in claims 6-7, Lakhani does not disclose the significant bit aspect. However, it is known that these unused bits can be designated as least significant bits of the address arguments or the most significant bits of the address argument as desired, for example, the designation can be based on whether the endiness of the associating logic operates on the data.

As in claim 8, Lakhani discloses an apparatus comprising: a non volatile memory unit (Lakhani's Fig 2: #16 , paragraph 13), a controller adapted to determine whether an addressing mode to access said memory unit is a byte addressing mode or a block

addressing mode and to send a command to access data within said memory unit according to said addressing mode (Lakhani's Fig 2, associating controlling logic such as controller engine #41, predecoder #50), wherein: in the byte addressing mode, address bits of an address argument of the command provide a byte address, and in the block addressing mode, said address bits of the address argument of the command provide a block address (Lakhani's paragraphs 70,76 bits such as a[22:0],E[7:0] etc.. provide an address for corresponding addressing modes), Lakhani does not disclose the block address having the same number of bits as the byte address. However, SD discloses a method accessing block of data using commands that are byte addressable (see SD's 1.5.10.4). It would have been obvious to one of ordinary skill in the art at the time of invention to include the block mode accessing data with byte addressable as suggested by SD in Lakhani's system thereby further allowing accessing data of memory being accessed in block mode with additional byte addressing capability.

As in claim 10, Lakhani does not, however SD discloses said memory unit is a secure digital (SD) memory card. It would have been obvious to include SD teaching in Lakhani's system for the same reason stated above.

As in claim 11, Lakhani disclose a non-volatile memory unit (Fig 2: 16); and a controller to determine whether an address mode to access said memory unit is a byte addressing mode or a block addressing mode and to send a command to access data within said memory unit according to said addressing mode. Lakhani's Table A discloses an addressing scheme having addressing mode bit C1 to determine the addressing mode of the address A[31:0]. Lakhani does not expressly disclose the size

of the command using with the above address scheme as being 48 bits and or the addressing mode bit is the ninth bit of a 48-bit command. However, SD discloses a 48 bit command is used for access a memory device such as secure digital memory device (SD's 4-3). SD further discloses a method accessing block of data using commands that are byte addressable (see SD's 1.5.10.4). It would have been obvious to one of ordinary skill in the art at the time of invention to include the block mode accessing data with byte addressable as suggested by SD in Lakhani's system thereby further allowing accessing data of memory being accessed in block mode with additional byte addressing capability. Regarding the claim's limitation the ninth bit of a 48-bit command. Lakhani and SD do not explicitly disclose the specific bit location. However, it is obviously, depending how many commands are needed for a particular memory system and what protocol being used, the size of the command can be varied, additional information can be included/removed in the command and thus information such as addressing mode, address bits etc.. can be arraigned in the command at various bit locations specifically as desired.

Claim 12 is rejected based on the same rational as of claim 11. Examiner further notes that the addressing mode associating with the 40 bits instead of associating with the $9^{th}$ bit as recited in claim 11 is due to reverse labeling the bits of the 48 bit command entity, which is known in the art as endiness of data.

As in claim 13, Lakhani discloses a storage medium having stored thereon instructions that when executed by a computing platform functionally associated with a non-volatile memory device result in (Lakhani Fig 2: #16 non volatile memory of a flash

memory system, paragraphs 5,17 providing instructions for a standard operating system being executed by a computing platform/host processor that result in) using one or more bits of a command as an addressing mode field to determine whether an address argument of the command is a byte address argument or a block address argument (Lakhani's page 7 table A, paragraph 75 discloses C1,C2 bits being used to determine the first mode, address bits being interpreted as byte address for an operation in a memory device, see paragraph 69; Lakhani's paragraph 76 discloses C1,C2 bits being used to determine the second mode, corresponding to the claim's block mode, in which an operation occurs for data in blocks of memory devices, see paragraph 70), wherein: when said address argument is a byte address argument, address bits of the address argument provide a byte address, and when said address argument is a block address argument, said address bits of the address argument provide a block address (Lakhani's paragraphs 70,76 bits such as a[22:0],E[7:0] etc.. provide an address for corresponding addressing modes), Lakhani does not disclose the block address having the same number of bits as the byte address. However, SD discloses a method accessing block of data using commands that are byte addressable (see SD's 1.5.10.4). It would have been obvious to one of ordinary skill in the art at the time of invention to include the block mode accessing data with byte addressable as suggested by SD in Lakhani's system thereby further allowing accessing data of memory being accessed in block mode with additional byte addressing capability.

As in claim 14, Lakhani discloses using one or more unused bits of the address argument as the addressing mode field. Lakhani's paragraph 84 discloses a method for

operating non-volatile devices using bits C1, C2 that is not being used as addressing bits.

Claim 15 rejected based on the same rationale as of claim 2.

Claim 16 rejected based on the same rationale as of claim 3.

As in claim 17 Lakhani further discloses wherein the addressing mode field comprise one or more unused bits of the address argument of the command (Lakhani's control bits and address bits corresponds to the claim's address argument. Because the control bits do not contain address bits of memory device such as bits A [22:0] etc..therefore the control bits are unused bits of an address argument as claimed).

As in claim 18, Lakhani disclose a method for operating a non-volatile memory device, the method comprising: receiving a command that includes an address argument comprising a plurality of address bits and an addressing mode field (Lakhani's paragraphs 73, 76-77, Table A control C1, C2 and address bits A[22:0], E[7:0]), the addressing mode field indicating whether the address argument contains a byte address or a block address (Lakhani's control bits and address bits corresponds to the claim's address argument, Lakhani's paragraphs 73,76-77); and

If the addressing mode field indicates that the address argument contains a byte address, using the address bits to address a byte of data; or if the addressing mode field indicates that the address argument contains a block address, using the address bits to address a block of data (Lakhani's paragraphs 73, 76-77 control C1, C2 and address bits A[22:0], E[7:0] provides proper address for a selected address mode),

Lakhani does not disclose the block address having the same number of bits as the byte address. However, SD discloses a method accessing block of data using commands that are byte addressable (see SD's 1.5.10.4). It would have been obvious to one of ordinary skill in the art at the time of invention to include the block mode accessing data with byte addressable as suggested by SD in Lakhani's system thereby further allowing accessing data of memory being accessed in block mode with additional byte addressing capability.

As in claim 19, Lakhani does not, however, SD discloses wherein the command further comprises a start bit, a transmission bit, a command code, a plurality of CRC, checksum bits and an end bit (see SD 4-3). It would have been obvious to include SD teaching in Lakhani's system for the same reason stated above.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lakhani et al (US 2003/0126385) and SanDisk Secure Digital Card product manual, version 1.9, herein SD, (SanDisk Corp, December 2003) as applied above, and further in view of Zer et al (US 2005/0055479).

As in claim 9, Lakhani discloses wherein said memory unit is a multi media card (MMC) (claim 9) Lakhani and SD do not expressly disclose the memory is a multi media card or secure digital card. However, Zer's paragraph 6 discloses systems using the removable storage device such as MMC and SD cards. It would have been obvious to one of ordinary skill in the art at the time of invention to use the removable memory cards, for example MMC and SD cards, as suggested by Zer in Lakhani's system modified by SD thereby further providing secure, light weight, efficient data transferring

storage media for various systems such as PDA, cellular telephones (see Zer's paragraphs 6-7).

Claims 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakhani et al (US 2003/0126385) and SanDisk Secure Digital Card product manual, version 1.9, herein SD, (SanDisk Corp, December 2003) as applied above, and further in view of PCI specification revision 2.2 (herein PCI Specification).

As in claims 20-22, Lakhani and SD do not expressly disclose the claims' detail associating with the addressing mode. However, PCI specification discloses wherein the addressing mode field comprises only a single bit (claim 20, PCI specification's page 202 AD[0]), the address argument contains a byte address when the addressing mode field contains zero (claim 21, PCI specification's page 202, I/O space address mode with AD[0] is zero), the addressing mode field comprises a bit of the address argument (claim 22, PCI specification's page 202, AD[0] comprises a bit of the address argument). It would have been obvious to one of ordinary skill in the art at the time of invention to use the address argument as taught by PCI specification into Lakhani's system modified by SD and thereby further allowing an unused bit AD [0] of the address argument AD [31:0] to be used as an address mode field indicator (see PCI specification page 202).

As in claims 23-24 Lakhani and SD do not expressly disclose the claim's aspect associating with the significant bit of a field such as address argument. However PCI specification discloses an address argument AD [31:0] in which the bits AD[0] represent address mode field, The binary values of AD[0] further indicates two address modes

corresponding to accessing data in I/O space and/or memory space. It would have been obvious to one of ordinary skill in the art at the time of invention to use the address argument as taught by PCI specification and thereby further allowing an unused bit AD[0] of the address argument AD[31:0] to be used as an address mode field indicator (see PCI specification page 202). It's further noted that the bit AD [0] can be designated as least significant/most significant bit, and the designation can be based on whether the endiness of the associating logic operates on the data.

***Response to Arguments***

Applicant's arguments in response to the last office action has been fully considered but they are not persuasive. Examiner respectfully traverses Applicant's arguments for the following reasons:

A) Applicant argument with regard to the rejection of claim 1 is not persuasive. Applicant argues, "Claim 1, as previously presented, specifically recites "using the one or more unused bits of the address argument of the command as an addressing mode field to determine whether said address argument is a byte address argument or a block address argument, wherein the remaining bits provide a byte address when the address argument is a byte address argument and the remaining bits provide a block address when the address argument is a block address argument." Applicant respectfully submits that neither Lakhani nor the SD manual, either alone or in combination, ever teach a byte addressing mode, much less a command that provides an addressing mode field and an address argument as required by claim 1. The Office Action cites the

bits C1 and C2 as being "used as a first mode/byte addressing mode." This conclusion is factually inaccurate. Lakhani never teaches or suggests any transaction in byte address mode - all modes provide block addresses. Referring to Table A (Par. 73), Lakhani teaches the modes as controlled by C1 and C2:

C 1 C2 = 00 - first mode where XC(7:0) set to "single erase block selection bits" (Par. 75)

C1C2 = 1X - second mode where XC(7:0) set to "block selection bits E(7:0)" (Par. 76)

C1 C2 -- 01 - third mode where XC(7:0) set to "multiblock selection bits" (Par. 77).

In each case, Lakhani operates in a block addressing mode. In the first case, a single block is accessed; in the latter cases multiple blocks are accessed. The Examiner has not shown, nor can Applicant find, any example where Lakhani has an argument that provides a byte address" .

In response, Examiner disagrees. Applicant alleges that Lakhani does not teach the claim's "byte addressing mode". However Applicant fails to set forth the explicit definition of the byte addressing mode. Applicant fails to point to any paragraph in the specification that clearly define what the byte addressing mode means, and what components constitute the byte addressing mode. The comments set fort are merely statements of alleged distinctions between the present invention and the Lakhani's teachings, rather than actual arguments with respect to the claimed subject matter and Lakhani's disclosure. As such, these arguments are found to be not persuasive.

Without an explicit definition, the byte addressing mode can be seen as a method to indicate a byte address in memory (i.e byte addressable). Lakhani teaches this byte addressing concept that indicates a byte address for a data byte to be accessed in a memory (paragraph 38, "and **the five lowest order address bits (A(4:0) determining the byte within the packet**"; paragraph 39, "..In response to the selection bits, circuit 12 selects one sector (row) of cells and circuit 13 selects eight of the columns of memory cells of array 16. **Address bits A(22:0) and AX thus together select a total of eight target cells in one selected row**..". It's noted that Lakhani byte addressing method can be used to address a byte so that the corresponding data can be written (i.e programming) or read from the memory (paragraphs 43-45). This basic addressing and basic write and read steps are applied in well known memory operations such as erase, write (i.e programming) and read for any granularity size of data. And thus the erase operation and the write operation can be seen as using the same addressing scheme such that some bits/cells etc..can be written with appropriated values (paragraph 39, "Depending on the value of each of the eight data bits, the corresponding target cell is either programmed or it remains in an erased state").

With regard to Applicant's argument that Lakhani does not teach an address argument that provides a byte address. Examiner disagrees. Lakhani's paragraphs 69 and 76 teach an embodiment wherein a byte addressing mode (Lakhani's first mode) having an address portion (Lakhani's A(22:0)) that indicate byte address for the write instruction to write certain bits/cells associating with this byte address (In response to bits A(22:0) and AX, predecoder 50 (in its first mode of operation) asserts wordline and

bitline selection bits to row decoder 12 and Y decoder circuit 13 (and circuits 12 and 13 then **select the cells to which the data byte is to be written**, in response to the selection bits). In other words, Lakhani clearly teach a command having address argument that indicates address of the memory location associating with the command.

Applicant further argues, " Further, the SD manual does not overcome this shortcoming. In particular, the SD manual never teaches a command that includes an addressing mode field to determine whether the address argument is a byte address argument or a block address argument. This is clear from the commands taught starting on page 4-17 of the SD manual. (Since the Office Action includes only selected pages of the manual, Applicant has provided the entire manual so that the record can be clear as to what the SD manual does and does not teach.) Referring to page 4-21, the SD manual teaches Block Read Command and Block Write Commands. The manual never teaches or suggest a command that includes a byte address argument. Applicant notes that the SD manual teaches that a block can be a single byte. The manual, however, never teaches a command that includes an addressing mode field to determine whether the address argument is a byte address argument or a block address argument. Rather the manual teaches a separate block length command (CMD 16 shown in Table 4-4 on page 4-21). The read, write and erase commands are all block command and do not include any mode field to alter this. Applicant, therefore, respectfully submits that claim 1 is allowable over the references of record"

In response, the claimed limitation "command that includes a byte address argument is taught by Lakhani as stated in the rejection of the claim, and discussed

above. Thus Examiner submit that Applicant fails to address the merits of the combination of Lakhani and SD, and merely attacks the SD reference for features that already taught by Lakhani. Applicant is reminded pursuant to MPEP § 2145 (IV.), "[o]ne cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981)." As such this argument is not persuasive..

B) Applicant's arguments regarding claims 2-7 are similar to the arguments offered for claim1 and the same responses apply. As such, these arguments are found to be not persuasive.

C) Applicant's arguments regarding claim 8 is similar to the arguments offered for claim1 and the same responses apply. As such, these arguments are found to be not persuasive.

D) Applicant's arguments regarding claims 9,10 and 17 are similar to the arguments offered for claim1 and the same responses apply. As such, these arguments are found to be not persuasive.

E) Applicant's arguments regarding claims 11 and 12 are similar to the arguments offered for claim1 and the same responses apply. In addition, with regard to the claimed aspect of the ninth bit and the 40-th bits, the claimed limitation is taught by prior art as recited in the rejection of the claim. As such, these arguments are found to be not persuasive.

F) Applicant's arguments regarding claim 13 is similar to the arguments offered for claim1 and the same responses apply. With regard to the claimed aspect of the

ninth bit and the 40-th bits, the claimed limitation is taught by prior art as recited in the rejection of the claims. As such, these arguments are found to be not persuasive.

G) Applicant's arguments regarding claims 14-16 are similar to the arguments offered for claim1 and the same responses apply. As such, these arguments are found to be not persuasive.

H) Applicant's arguments regarding claims 18 is similar to the arguments offered for claim1 and the same responses apply. As such, these arguments are found to be not persuasive.

I) Applicant's arguments regarding claims 19-24 are similar to the arguments offered for claim1 and the same responses apply. As such, these arguments are found to be not persuasive.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 36 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

When responding to the office action, Applicant is advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Hyung S. Sough/
Supervisory Patent Examiner, Art Unit 2188
10/31/08